DERWENT-ACC-NO: 1999-603252

DERWENT-WEEK: 200273

TITLE: Zirconium alloy tube, used as a nuclear fuel rod cladding tube or a nuclear fuel assembly guide tube, is produced

INVENTOR: CHARQUET, D; MARDON, J ; SENEVAT, J ; MARDON, J P

PATENT-ASSIGNEE: FRAMATOME[FRAT] , CIE GEN MATIERES NUCLEAIRES SA[COGM],
FRAMATOME SA[FRAT], FRAMATOME CO LTD[FRAT], COGEMA CIE GEN MATIERES
NUCLEAIRES[COGM], FRAMATOME & CO[FRAT]

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RU 2187155 C2 G21C 003/07	August 10, 2002	N/A	000
FR 2776821 A1 G21C 003/07	October 1, 1999	N/A	007
WO 9950854 A1 N/A	October 7, 1999	F	000
EP 1068621 A1 G21C 003/07	January 17, 2001	F	000
CN 1298542 A G21C 003/07	June 6, 2001	N/A	000
KR 2001042319 A G21C 003/07	May 25, 2001	N/A	000
TW 440875 A G21C 013/032	June 16, 2001	N/A	000
JP 2002509991 W C22C 016/00	April 2, 2002	N/A	015
ZA 200005472 A G21C 000/00	March 27, 2002	N/A	025

DESIGNATED-STATES: CN JP KR RU US ZA AT BE CH CY DE DK ES FI FR GB GR IE IT LU
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RU 2187155C2	N/A	1999WO-FR00737	March 30, 1999
RU 2187155C2	N/A	2000RU-0125563	March 30, 1999

RU 2187155C2 FR 2776821A1 March 31, 1998	Based on N/A	WO 9950854 1998FR-0003970	N/A
WO 9950854A1 March 30, 1999	N/A	1999WO-FR00737	
EP 1068621A1 March 30, 1999	N/A	1999EP-0910461	
EP 1068621A1 March 30, 1999	N/A	1999WO-FR00737	
EP 1068621A1 CN 1298542A March 30, 1999	Based on N/A	WO 9950854 1999CN-0805408	N/A
KR2001042319A September 29, 2000	N/A	2000KR-0710868	
TW 440875A April 28, 1999	N/A	1999TW-0104980	
JP2002509991W March 30, 1999	N/A	1999WO-FR00737	
JP2002509991W March 30, 1999	N/A	2000JP-0541690	
JP2002509991W ZA 200005472A October 6, 2000	Based on N/A	WO 9950854 2000ZA-0005472	N/A

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ABSTRACTED-PUB-NO: FR 2776821A

BASIC-ABSTRACT:

NOVELTY - A zirconium alloy tube is produced by heat treatment, extrusion and cold rolling of a zirconium-niobium alloy of relatively high total iron and chromium or vanadium content.

DETAILED DESCRIPTION - A tube is produced by subjecting a rod of zirconium alloy, which contains (by wt.) 0.03-0.30% total Fe and Cr or V, 0.8-1.3% Nb, less than 300 ppm Sn, less than 1600 ppm O, less than 100 ppm C, 5-30 ppm S and less than 50 ppm Si, to water quenching from 1000-1200 deg. C, extrusion at 600-800 deg. C, cold rolling in four or more passes with intermediate anneals at 560-620 deg. C and final annealing at 560-620 deg. C, all the heat treatments being carried out in an inert atmosphere or under vacuum.

USE - For production of a nuclear fuel rod cladding tube or a nuclear fuel assembly guide tube, especially a fuel rod cladding tube for a PWR.

ADVANTAGE - The tube contains intermetallic compounds (Laves phase) of Zr(Nb, Fe, Cr)2 type which reduces the quantity of beta phase niobium

precipitates and
the solid solution niobium content to provide increased resistance to corrosion
by lithium-containing media, without affecting the uniform corrosion resistance
at about 400 deg. C and without requiring an excessive number of rolling
operations during tube production.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: ZIRCONIUM ALLOY TUBE NUCLEAR FUEL ROD CLAD TUBE NUCLEAR FUEL
ASSEMBLE GUIDE TUBE PRODUCE

DERWENT-CLASS: K05 M26 X14

CPI-CODES: K05-B04; K05-B04B; M26-B06; M26-B06C; M26-B06J; M26-B06N; M26-B06V;

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